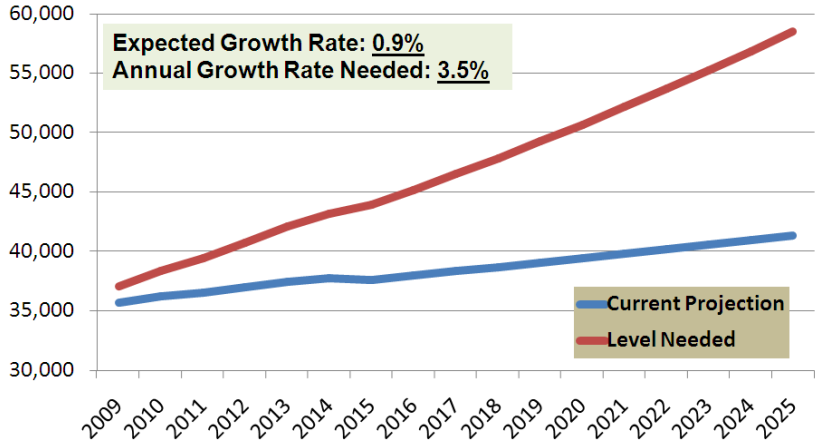
The Student Flow Model:
A Roadmap for Increasing Degree Productivity in Tennessee

Tennessee higher education institutions need to produce a cumulative additional 269,000 degrees (Associates and Bachelors) by 2025[i] for the state to reach the national average degree attainment[ii]. Currently, Tennessee produces approximately 35,000 such graduates per year. Holding conditions constant, current production indicates that annual degree production will be about 38,000 in 2015. The state cannot reach the national average by 2025 with this level of degree production. To achieve the goal, Tennessee higher education must be producing 44,000 postsecondary degrees per year by 2015 and eventually 59,000 degrees per year by 2025 (Chart 1). In the other words, Tennessee needs to continuously increase its degree productivity by 3.5 percent every year from now until 2025.

Chart 1: Projected Annual Degree Production by Tennessee Higher Education from 2009-2025 and Required Degree Production Level to Reach the National Average of Educational Attainment by 2025

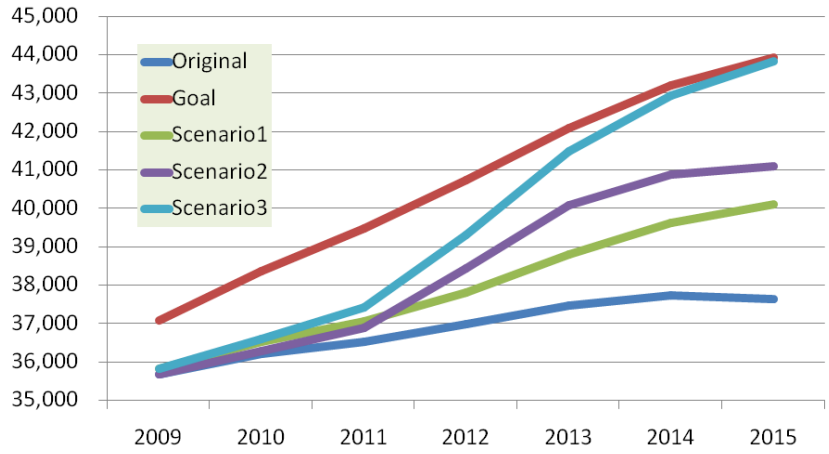


The table below shows projected degree production levels in 2015 simulated by the student flow model. 2015 is the end year of the next master plan cycle, and the student flow model was developed to explore what must be accomplished by 2015 to put Tennessee on track to reach the national average in educational attainment by 2025. Scenario 1 assumes K-12 alone will make substantial improvements by 2015, while the second scenario assumes that only higher education will improve. The third scenario combines these first two scenarios, assuming performance improvements across the P-16 spectrum.

Variables	Base	Scenario1	Scenario2	Scenario3
High School Graduation Rate	71	***75***	71	***75***
College-going rate of HS Grad	65	***69***	65	***69***
Out-migration rate of HS grad	13	***9***	13	***9***
Dual enrollment participation ratio per 100 seniors	16	***26***	16	***26***
% of students required to take at least one remedial or developmental course	33	***29***	33	***29***
2nd Year retention rate				
UT	78	78	***82***	***82***
TBR Universities	73	73	***77***	***77***
TBR Community Colleges	55	55	***59***	***59***
3rd Year retention rate				
UT	68	68	***77***	***77***
TBR Universities	63	63	***71***	***71***
TBR Community Colleges	32	32	***40***	***40***
4th Year retention rate				
UT	63	63	***76***	***76***
TBR Universities	57	57	***70***	***70***
TBR Community Colleges	18	18	***28***	***28***
6-year Graduation rate				
UT	55	55	64	64
TBR Universities	43	43	52	52
TBR Community Colleges	21	21	27	27
Annual Expected Degree Production (Associates and Bachelors) by 2015	37,635	40,103	41,721	43,844

Chart 2 shows projected annual degree production for each scenario. Only scenario 3 enables Tennessee to reach the goal. This chart implies that the necessary improvements in degree production must result from collaboration between K-12 and higher education.

Chart2: Projected Annual Degree Projection (Associates and Bachelors) 2009-2015:
Tennessee Higher Education Total, both Public and Private



ssumed that for-profit institutions will increase their degree productivity by 2%

Lastly, the table below breaks out the degree production levels (base model and scenario 3) by degree level and system.

Degree Production Projections and Additional Degrees Needed to Reach the National Average of Educational Attainment by 2025, by System

System	Current Degree Production in 2008-09 (Est)	Completion Level in 2014-15 (Base)	Completion Level in 2014-15 (Scenario 3)	Compound Average Growth Rate
UT	6,216	7,169	8,739	5.8%
TBR Universities	11,153	12,154	14,202	4.1%
TBR 2-year	7,254	7,597	9,106	3.9%
TICUA	11,062	10,715	11,796	1.1%
Total	35,685	37,635	43,844	3.5%

[i] Source: Unpublished data from the National Center for Higher Education Management Systems
[ii] Age 25-64 population with Associates or higher